Number Sense Exam 101, 1/21/2021

(1) $301 + 412 + 413 =$ _____

(2) $16\frac{2}{3}\% =$ _____ (fraction)

(3) $7002 - 2007 =$ _____

(4) $2001 + 523 - 67 =$ _____

(5) $2.007 + 20.07 =$ _____ (decimal)

(6) $3\frac{1}{4} \times 1\frac{1}{7} =$ _____ (fraction)

(7) $345 - 612 =$ _____

(8) $2468 \div 9$ has a remainder of _____

(9) $88\% =$ _____ (fraction)

*(10) $6002 + 602 + 206 - 2006 =$ _____

(11) $24 \times 17 - 19 \times 17 =$ _____

(12) $\frac{7}{40} =$ _____ % (decimal)

(13) The GCD of 36 and 48 is _____

(14) $2006 - 2006 \times 6 =$ _____

(15) $33\frac{1}{3}\%$ of a yard = _____ (inches)

(16) 2020 has how many positive integral divisors? ___

(17) $14 \times 18 + 14 \times 32 =$ _____

(18) $44 \times 55 =$ _____

(19) Which is smaller, $\frac{2}{7}$ or .27? = _____

*(20) $143 \times 69 =$ _____

(21) How many positive integers less than or equal to 20 are relatively prime to 20? _____

(22) $|2 - 3 - |5 - 7| + 11| =$ _____

(23) $27^2 + 9^2 =$ _____

(24) $(21 + 34 \times 7) \div 11$ has a remainder of _____

(25) $\sqrt{27 \times 48} =$ _____

(26) $|1 - 2| - |3 - 4| + |5 - 6| =$ _____

(27) 1.25 gallons = _____ ounces

(28) $52 \times 53 =$ _____

(29) 12.8 is what percent of 20? _____ %

*(30) $\sqrt{6} \times 597 =$ _____

(31) The area of a rectangle with a length of 1.25 ft. and a width of 3.2 ft. is _____ sq. ft.

(32) 39% of _____ is 12% of 52.

(33) The largest value of x such that $|3x + 2| \leq 11$ is _____

(34) The sum of the roots of $6x^2 + x + 3 = 0$ is _____

(35) $(5! - 3!) \div 4! =$ _____ (mixed number)

(36) $(1000 + 1001) \div 9$ has a remainder of _____

(37) The 4-digit number $215k$ is divisible by 8. $k =$ _____

(38) $97 \times 89 =$ _____

(39) The sum of the positive integral divisors of 40 is _____

*(40) $224488 \div 111 =$ _____

(41) If $13 < b < 85$ are the integral sides of a right triangle then the are of the triangle is _____

(42) Find the area of a triangle with side lengths of 11 cm, 60 cm, and 61 cm. _____ cm^2

(43) $15°C =$ _____ °F

(44) $63 \div 1.75 =$ _____

(45) 3 gallons = _____ cu. inches.

(46) $104 \times 103 =$ _____

(47) For hat value of k does $x^2 - 3x + k = 0$ have equal roots? _____

(48) $15 \times 4! - 5! =$ _____

(49) The sum of the measures of the interior angles of a regular heptagon is _____ °

*(50) $8\frac{2}{3} \times 314 \div 13 =$ _____

(51) $0.2434343\ldots =$ _____ (proper fraction)

(52) How many ways can 5 people be seated 4 at a time in 4 chairs in a row? _____

(53) Given: $2, 5, 10, 17, 26, 37, k, 65, \ldots$, $k =$ _____

(54) $(3 - 5\mathrm{i})(3 - 5\mathrm{i}) = a + b\mathrm{i}$. Find $a + b$. _____

(55) $\sin\left(-\frac{\pi}{3}\right) \times \sin\left(\frac{\pi}{3}\right) =$ _____

(56) Y varies indirectly with X and $Y = 10$ when $X = 2$. Find Y when $X = 6$. _____

(57) If $3\log_4 x = 6$, then $x =$ _____

(58) 12% of $433\frac{1}{3} =$ _____

(59) $300_6 \div 4_6 =$ _____ 6

*(60) $142857 \times 55 =$ _____

(61) The slope of the line containing the points $(-4, 3)$ and $(3, -2)$ is_____

(62) The simplified coefficient of the x^2y^3 term in the expansion of $(2x + y)^5$ is _____

(63) The volume of a rectangular pyramid with a base width of 2.4 in., a base length of 2.5 in., and a height 7 in. is _____ cu in.

(64) If $\log_8(3x - 7) = \frac{2}{3}$, then $x =$ _____

(65) If $(\sqrt[3]{x^5})(\sqrt{x^3}) = (\sqrt[n]{x^k})$, where n and k are relatively prime, then $k =$ _____

(66) $22_6 + 33_6 + 44_6 =$ _____ 6

(67) Change $0.2111\ldots$ base-5 to a base-10 fraction. _____

(68) How many committees of 4 people can be formed using 7 people? _____

(69) The smaller root of $12x^2 - 11x - 15 = 0$ _____

*(70) The volume of a sphere with a diameter of 12 cam is _____ cu. cm

(71) If $f(x) = \frac{5x - 2}{4x + 3}$, then $f'(-1) =$ _____

(72) If $f(x) = \frac{8}{3 + x}$, then $f^{-1}(2) =$ _____

(73) Find the number of positive proper fractions in lowest terms with a denominator of 13. _____

(74) If $122_b = 50$ then $221_b =$ _____

(75) Change 0.123 base-4 to a base-10 fraction. _____

(76) $f(x) = x + \frac{1}{x}$ has _____ asymptotes

(77) If $33_b = 24$ then $42_b =$ _____

(78) $\int_0^5 (x - 2)\,dx =$ _____

(79) $\lim_{x \to \frac{1}{3}} \left(\frac{9x - 3}{9x^2 - 1}\right) =$ _____

*(80) $1250 \div 1666 \times 4444 =$ _____